

12086500 NISQUALLY RIVER AT LA GRANDE, WA

Puget Sound Basin
Nisqually Subbasin

LOCATION.--Lat 46°50'37", long 122°19'46" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.29, T.16 N., R.4 E., Pierce County, WA, Hydrologic Unit 17110015, on right bank 0.4 mi downstream from Tacoma Public Utilities powerplant, 0.6 mi northwest of La Grande, 0.8 mi upstream from Mashel River, and at mile 40.4.

DRAINAGE AREA.--292 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1906 to October 1911, November to December 1911 (gage heights only), October 1919 to September 1931, October 1943 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "below Little Nisqually River, near La Grande" September 1906 to October 1911, and as "near La Grande" November to December 1911 and October 1919 to September 1931.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1316: 1927-28(M), 1949-50. WRD WA-74: 1956(M), 1959-61(M), 1965.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 490 ft above NGVD of 1929, from river-profile map. See WSP 1932 for history of changes prior to Feb. 8, 1945.

REMARKS.--Records good. Flow regulated by Tacoma Public Utilities powerplant at La Grande since December 1943, by Alder Reservoir (station 12085000) since November 1944, and by La Grande Reservoir (station 12085500) since February 1945. All diversions returned to river upstream from gage. U.S. Geological Survey satellite telemeter at station. Chemical analyses October 1972 to September 1985. Water temperatures October 1965 to September 1982.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--82 years (water years 1907-11, 1920-31, 1944-2008), 1,433 ft³/s, 66.64 in/yr, 1,038,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,500 ft³/s, Feb. 8, 1996, gage height, 15.30 ft, from rating curve extended above 5,300 ft³/s, and computed flow over dam as provided by Tacoma Public Utilities; practically no flow on many days at site "near La Grande" (which excluded diversion between 1920 and 1930) as a result of regulation.

CORRECTIONS.--Ac-ft adjusted for change in contents Alder and La Grande Reservoirs for water year 2007.

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
18,570	274,700	190,200	138,100	93,670	194,100	91,200	74,030	57,070	47,780	28,150	18,870

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,190 ft³/s, May 28, gage height, 7.04 ft; minimum discharge, 473 ft³/s, Oct. 2, gage height, 2.77 ft.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	641	613	1,050	1,920	1,960	1,050	1,850	1,000	2,820	2,460	1,090	962
2	636	605	1,060	1,950	1,970	1,050	1,840	1,000	2,780	2,440	1,090	968
3	645	619	1,930	1,960	1,980	1,060	1,840	1,010	2,500	2,620	1,100	962
4	648	628	2,550	1,930	1,960	1,060	1,820	999	2,490	1,840	1,050	955
5	654	616	2,500	1,800	1,960	1,050	1,340	1,000	2,440	1,550	978	966
6	649	602	2,460	1,710	1,950	1,050	1,130	992	2,520	1,550	947	964
7	648	600	2,470	1,700	1,980	1,050	1,230	999	2,800	1,430	945	962
8	641	604	2,510	1,700	2,090	1,050	1,520	996	2,810	1,320	932	965
9	644	608	2,480	1,720	2,210	1,050	1,600	992	2,810	1,140	925	963
10	637	609	2,480	1,720	2,130	1,040	1,380	995	3,050	1,120	925	957
11	631	610	2,450	1,730	1,780	1,040	1,380	995	3,410	1,180	923	956
12	622	616	2,480	1,720	1,560	1,050	1,160	1,140	3,350	1,240	934	955
13	617	628	2,470	1,700	1,470	1,060	1,160	1,440	2,420	1,270	929	954
14	626	618	2,460	1,690	1,450	1,060	1,160	1,520	1,820	1,370	930	953
15	636	616	2,490	1,690	1,230	e1,100	1,150	1,900	1,820	1,470	932	888
16	637	620	2,450	1,690	1,230	e1,090	1,170	2,160	1,960	1,450	924	887
17	634	617	2,510	1,680	1,240	e1,090	1,160	2,190	e2,150	1,390	926	892
18	635	613	2,170	1,690	1,230	e1,090	1,150	2,350	2,310	1,150	925	888
19	633	613	1,950	1,670	1,230	e1,090	1,000	2,740	2,470	1,140	925	888
20	623	625	1,940	1,690	1,230	e1,090	995	3,220	2,520	1,160	928	892
21	621	889	1,910	1,680	1,210	e1,110	993	3,860	2,470	1,150	927	888
22	625	993	1,900	1,670	1,140	1,070	999	4,050	2,490	1,120	925	889
23	627	1,020	1,900	1,690	1,130	1,050	992	3,210	2,470	1,130	922	886
24	624	1,050	1,920	1,670	1,130	1,050	996	3,220	2,470	1,100	924	877
25	623	1,050	1,900	1,670	1,140	1,050	1,000	3,190	2,250	1,100	920	855
26	621	1,050	1,910	1,680	1,120	1,060	1,010	3,240	1,970	1,100	924	858
27	633	1,050	1,890	1,680	1,050	1,160	997	4,190	1,970	1,100	951	864
28	621	1,060	1,900	1,790	1,060	1,580	993	4,640	1,980	1,110	965	871
29	614	1,070	1,910	1,970	1,050	1,880	992	4,140	1,970	1,100	962	863
30	615	1,050	1,930	1,950	---	1,850	996	3,070	2,280	1,110	962	941
31	628	---	1,900	1,970	---	1,830	---	2,840	---	1,110	962	---
Total	19,589	22,562	65,830	54,480	43,870	35,960	37,003	69,288	73,570	42,520	29,602	27,569
Mean	632	752	2,124	1,757	1,513	1,160	1,233	2,235	2,452	1,372	955	919
Max	654	1,070	2,550	1,970	2,210	1,880	1,850	4,640	3,410	2,620	1,100	968
Min	614	600	1,050	1,670	1,050	1,040	992	992	1,820	1,100	920	855
Ac-ft	38,850	44,750	130,600	108,100	87,020	71,330	73,400	137,400	145,900	84,340	58,720	54,680
Mean adjusted for change in contents in Alder and La Grande Reservoirs												
	732	946	2,702	1,557	1,198	1,465	1,133	3,247	2,490	1,361	741	452
CFSM adjusted for change in contents in Alder and La Grande Reservoirs												
	2.51	3.24	9.25	5.33	4.10	5.02	3.88	11.12	8.53	4.66	2.54	1.55
In. adjusted for change in contents Alder and La Grande Reservoirs												
	2.89	3.62	10.67	6.15	4.42	5.78	4.33	12.82	9.51	5.38	2.93	1.73
Ac-ft adjusted for change in contents Alder and La Grande Reservoirs												
	45,000	56,260	166,200	95,750	68,910	90,090	67,420	199,700	148,100	83,710	45,580	26,900

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	Calendar Year 2007	Water Year 2008
Total	529,640	521,843
Mean	1,451	1,426
Max	6,910	4,640
Min	600	600
Ac-ft	1,051,000	1,035,000
Mean adjusted for change in contents in Alder and La Grande Reservoirs	1,396	1,508
CFSM adjusted for change in contents in Alder and La Grande Reservoirs	4.78	5.16
In. adjusted for change in contents Alder and La Grande Reservoirs	64.92	70.25
Ac-ft adjusted for change in contents Alder and La Grande Reservoirs	1,011,000	1,094,000

